

ATOMIC ENERGY *newsletter*®

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
ROBERT M. SHERMAN, EDITOR. PUBLISHED BI-WEEKLY BY ATOMIC ENERGY NEWS CO., 1000 SIXTH AVENUE, NEW YORK 18, N. Y.

Dear Sir:

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Nuclear division has been established at Albuquerque, N. M., by Kaman Aircraft Co. Vice-president and general manager of new division is Kenneth W. Erickson, formerly chief of the experimental weapons branch of Sandia Corp., the weapons engineering division of Western Electric Co. Initial shipment of parts for nuclear research reactor, to be built in Brazil, left New York last fortnight, according to Babcock & Wilcox Co., which is designing and fabricating the unit for the Institute of Nuclear Studies, Sao Paulo. Reactor, of the swimming pool type, will be rated at 5,000 kilowatts of heat energy. (Other BUSINESS NEWS, p. 2 this LETTER.)

Beckman Instruments, Inc., manufacturer of nuclear and other type instruments, is "actively hunting" for other instrument companies with view to their acquisition. Arnold C. Beckman, president, said the firm is now negotiating "with four or five" for this purpose. Beckman's objectives are integration in its own field rather than diversification, he said. Dr. Beckman predicted that for fiscal 1957 the company will earn more than the \$1.36 a share reported for fiscal 1956, with sales increasing to around \$40 million from \$29.3 million. Cash outlay for research and development is now taking about 10% to 11½% of the sales dollar, he observed. (Other FINANCIAL NEWS p. 5 this LETTER.)

India's first nuclear research reactor, which went critical in August 1956, was formally inaugurated last fortnight in Bombay. Thanks were extended to Britain, the United States, Canada and France by Prime Minister Nehru for the technical and material assistance they had given India in the project. Dr. H. J. Bhabha, chairman of India's Atomic Energy Commission, told the inaugural group that India's resources of thorium and uranium hold great hopes that nuclear energy will assist in the long-term industrialization of that country, since it seriously lacks adequate coal, oil and hydro-power. (Plant at Alwaye is now refining thorium-and uranium-containing monazite sands of the Kerala coast, with plant at Bombay producing pure uranium and thorium salts. Under construction is facility to produce uranium metal; also under construction at Nangal is heavy water plant. Present reactor uses uranium supplied by British and heavy water from U. S.) (Other RESEARCH projects, p. 4 this LETTER.)

Notes on Atomic Energy for Medical Officers is new book prepared by staff of British Royal Naval Medical School giving basic information for service physicians on short-term effects of nuclear explosions and dangers from other types of radiological warfare. Chapters on introductory physics, natural and artificial radioactivity, etc., make this book an elementary text of value on the subject with a minimum of mathematics. Published at \$4.75, book is issued by Philosophical Library, 15 E. 40th St., New York 16. (Other BOOKS, PUBLICATIONS, p. 2 this LETTER.)

Radiation health problems in New York City are steadily increasing, the City's Health Commissioner Leona Baumgartner disclosed last week. Dr. Baumgartner said that in 1956 her department's special sanitary inspectors trained in radiation detection visited 32,690 places in the city with potential radiological hazards.

ATOMIC ENERGY BUSINESS NEWS...

NUCLEAR MACHINERY SHIPMENTS MADE:- Fenn Manufacturing Co., Newington, Conn., from its nuclear machinery division there, shipped last month a two-high rolling mill to the atomic energy division of Sylvania Electric Products Corp., Hicksville, L. I., as well as a long die swaging machine to the Dansville, Ohio plant of Foster-Wheeler Corp. Fenn also shipped Hanford atomic products operation (General Electric Co.-operated), Richland, Wash. a specially designed Fenn draw bench. The Fenn company, with long-time experience in producing conventional metal forming equipment, and now active in nuclear materials field, is supplying the bulk of the metal forming equipment for the new Martin Company nuclear plant. A swaging machine and rolling mill were shipped to the Martin plant last month, with a draw bench scheduled for shipment this month. Design of the Fenn nuclear equipment is such that it may be adapted to hooded or remote control operation.

NEW FACILITIES OPENED:- New facility in Long Island City, near the metropolitan New York area, operated by Radiation Applications, Inc., now offers commercial radiation service on a contract or other basis. The source furnishing this gamma radiation is cobalt-60 produced by irradiation in the Brookhaven National Laboratory reactor. This is first established laboratory of Radiation Applications which was formed in 1954 to advise on commercial uses of ionizing radiation..... Griscom-Russell Co., manufacturer of heat transfer apparatus and engineering specialties, has expanded at Massillon, Ohio, by adding a building where it will develop and build heat exchange equipment exclusively for nuclear plant applications. (Firm is a unit of General Precision Equipment Corp., New York, active in various phases of nuclear work.)

FOREIGN SALES RIGHTS GIVEN BRITISH FIRM BY U.S. COMPANY:- Sales rights outside North America of Alco Products-designed nuclear power plants have been granted by Alco to Humphreys & Glasgow, Ltd., of Great Britain. The British engineering company, and Alco Products, Inc., Schenectady, N.Y., will work together in the marketing, engineering and construction of reactors and other nuclear equipment designed by Alco. It is planned to initially offer a complete 10,000 electrical kilowatt nuclear generating station, with reactor system working on the pressurized-water cycle, based on prototype built by Alco and scheduled to operate shortly. Although this will be the basic design offered, modifications to meet specific requirements will be made. H & G operates a branch office in Australia, subsidiary company in Canada, and associate companies in France, W. Germany, India, Japan, and S. Africa.

JOINT NUCLEAR POWERED SHIP PROGRAM SHOWS PROGRESS:- Additional design feasibility studies on reactor systems are contemplated under the joint USAEC-Maritime Administration program for development of nuclear powered surface vessels. The joint program now includes long range work on developing a nuclear powered merchant fleet in addition to the work now progressing on the combination passenger-cargo vessel authorized by Congress last year. Under this long-range program, the two agencies have contracts with six industrial firms (North American Aviation; Sperry-Rand; General Dynamics; AMF Atomics; General Motors; and Babcock & Wilcox) for work on four reactor systems. Now, additional studies are being considered by the agencies.

NUCLEAR PLANT REPAIRS UNDERWAY:- Repair work at the USAEC's Paducah, Ky., facility has restored that unit to 80% operation, with work still continuing. The plant, damaged by a \$2 million fire, produces uranium-235 by the gaseous diffusion process; operation is by Union Carbide Nuclear Co. under prime USAEC contract. Plant repairs are being done by Malan Construction Corp., New York.

NEW BOOKS & OTHER PUBLICATIONS...on nuclear subjects...

Nuclear Notes for Industry; Jan. 11, 1957. --USAEC, Tech. Info., Oak Ridge, Tenn.
Annual Review of Nuclear Science, Vol. VI of the series. Edited by J.G. Berkerley, M.D. Kamen, L.I. Schiff. --Annual Reviews, Inc., Palo Alto, Calif. (\$7.00)
Adaptation to Ionizing Radiation, by A.T. Krebs, J.B. Storer, Army Med. Res. Lab. No. PB-121352 (50¢)..... Calculated Efficiencies of Sodium Iodide Crystals, by E. A. Wolicki, R. Jastrow, F. Brooks, Naval Res. Lab. No. PB-121419 (\$1) --Office of Technical Services, Wash. 25, D. C.

Progress Report on Atomic Energy Research; report of Congressional hearings June 4-8, 1956. No. Y4.At7/2:R31 --Sup't. of Docs., Wash. 25, D.C. (\$1).

ATOMIC ENERGY PATENT & TRADE-MARK DIGEST...latest grants...

GRANTS TO PRIVATE INDIVIDUALS AND/OR ORGANIZATIONS:- Automatic proportional counter for geophysical applications. U. S. Pat. No. 2,778,947 issued Jan. 22, 1957 to Serge A. Scherbatskoy, Tulsa, Okla. (Application date: Jan. 22, 1951.)

Apparatus for localized neutron logging. U. S. Pat. No. 2,778,950 issued Jan. 22, 1957; assigned to Schlumberger Well Surveying Corp., Houston, Tex. (Application date: Jan. 22, 1952.) (Inventors: H. B. Frey, Jr., J. Tittman.)

Neutron logging method and apparatus. U. S. Pat. No. 2,778,951 issued Jan. 22, 1957; assigned to Schlumberger Well Surveying Corp., Houston, Tex. (Application date: Dec. 12, 1952.) (Inventor: J. Tittman.)

GRANTS TO GOVERNMENT ORGANIZATIONS:- Method of recovering plutonium contained in a large quantity of uranium. U. S. Pat. No. 2,778,730 issued Jan. 22, 1957; assigned to United States of America (USAEC). (Application date: Sept. 29, 1944.) (Inventors: F. H. Spedding, T. A. Butler.)

Method of unloading nuclear reactor containing uranium metal. U. S. Pat. No. 2,778,792 issued Jan. 22, 1957; assigned to United States of America (USAEC). (Application date: April 19, 1946.) (Inventor: Leo Szilard.)

Bonding a coating of rhenium to a carbonaceous part. U. S. Pat. No. 2,778,786 issued Jan. 22, 1957; assigned to United States of America (USAEC). (Application date: Jan. 22, 1957.) (Inventors: Harry Pearlman, Louis Silverman, Curtiss A. Smith.)

Tetravalent uranium chelate compounds and process for their preparation. U. S. Pat. No. 2,778,843 issued Jan. 22, 1957; assigned to United States of America (USAEC). (Application date: April 25, 1949.) (Inventors: Horace D. Brown, Frederick J. Wolter.)

Recovery of uranium from wash liquids. U. S. Pat. No. 2,779,657 issued Jan. 29, 1957; assigned to United States of America (USAEC). (Application date: Nov. 19, 1945.) (Inventor: Albert E. Bellard.)

Control device for nuclear reactor. U. S. Pat. No. 2,779,728 issued Jan. 29, 1957; assigned to United States of America (USAEC). (Application date: Dec. 3, 1946.) (Inventors: Walter H. Zinn, Thomas Brill.)

Galvanometer pulse analyzer system. U. S. Pat. No. 2,779,875 issued Jan. 29, 1957; assigned to United States of America (USAEC). (Application date: Apr. 6, 1954.) (Inventors: Casimer J. Borkowski, Frank M. Porter.)

Radioactivity-distribution detector. U. S. Pat. No. 2,779,876 issued Jan. 29, 1957; assigned to United States of America (USAEC). (Application date: Mar. 3, 1953.) (Inventors: C. A. Tobias., H. O. Anger.)

TRADE-MARK NOTES:- Budd Co., Philadelphia, Pa., is to receive grant for mark Multitron (SN-13,015), and mark Iriditron (SN-13,014) for remote exposure and handling equipment for radioactive isotopes. Applications for both marks were filed July 30, 1956; grants will be made if no opposition is filed before Mar. 1, 1957.

M. W. Kellogg Co., New York, N.Y., is to receive grant for mark Kel-Ray (SN-12,891) for projector for radiography. Application filed July 26, 1956; grant will be made if no opposition is filed before Mar. 1, 1957.

CONTRACTS AWARDED...on nuclear projects...

WASHINGTON, D.C.:- Contracts to two companies to build three more nuclear powered submarines have been awarded by the Navy Department. One contract was to Ingalls Shipbuilding Corp. to build submarines SSN-590 and SSN-592 at its Pascagoula, Miss. yard. Total contract award was \$40,998,770. Other contract was with Electric Boat div. of General Dynamics Corp. to build SSN-589 at its Groton, Conn. yard at a price of \$25,800,000. Propulsion equipment, including reactors, etc., will be furnished by other suppliers at additional cost. (Contracts were fixed price and were awarded following competitive negotiations.)

OAK RIDGE, TENN.:- Two year extension of American Industrial Transport, Inc.'s contract with the USAEC has been granted by the Commission's office here. AIT operates bus transportation system for the Oak Ridge area; its contract is now extended to June 30, 1959.

IDAHO FALLS, IDAHO:- Contract to construct the low power test facility (aircraft nuclear propulsion project) at the National Reactor Testing Station here was awarded by the USAEC to Arrington Construction Co., Inc., Idaho Falls, on a low bid of \$1,119,280. Arrington's bid was lowest of three received.

NEWS FROM ABROAD...in the atomic energy field...

UNION OF SOUTH AFRICA:- Preliminary estimates of the South African Excise and Customs Department place the value of South African exports of prescribed materials (uranium and thorium under the Atomic Energy Act) in October, 1956, at £3,020,144. In October, 1955, uranium and thorium exports were valued at £4,253,087. For the first 10-months of 1956, total exports of these materials totaled £30,845,170 compared with £24,295,724 for the corresponding period of 1955.

W. GERMANY:- North Rhine Westphalian Parliament has unanimously made request of the State Government to order from the United Kingdom a nuclear reactor of the DIDO type. Reactor would be used in a nuclear research center to be set up near Dusseldorf.

SWITZERLAND:- Some 61.8 million Swiss francs have been allocated for its 1957 research program by Council of the European Organization for Nuclear Research (CERN). This compares with 39.6 million Swiss francs for that purpose for 1956. (CERN expects to have its two synchro-cyclotrons in operation by the second half of 1957.) For the long term capital investment program (actual construction period) from 1952 to 1960, the Council has approved 219 million Swiss francs. Of this amount, construction costs are estimated at 166 million Swiss francs, with 53 million for operating expenses covering research, theory, experimentation, and maintenance.

GREAT BRITAIN:- Recent conference at the Atomic Energy Research Establishment, Harwell, (Jan. 18th) on utilization of heat from nuclear reactors, was concerned with potential uses for reactor heat apart from the generation of electricity. Considered was use of this heat in the heavy chemical industry, for large scale distillation of water, in the coal industry, and as applied to problems of gas producing organizations.

RESEARCH & EDUCATIONAL NEWS...

PROGRESS IN NATIONAL ATOMIC ENERGY PROGRAM REPORTED:- The USAEC's semi-annual report to Congress covering the period June-December 1956 has reported "substantial progress" in expanding the commercial uses of atomic energy; in the production of nuclear materials; and in the development of atomic weapons. In the weapons field, the report said that work continued on designs for defensive purposes and on methods of reducing the radioactive contamination from explosions. (Full report is available from Superintendent of Documents, Wash. 25, D. C.; price 60¢.)

NEW RESEARCH FACILITIES:- Radiation research facilities at Stanford Research Institute, Menlo Park, Calif., are being expanded in a program with a 1957 budget of over \$1 million. A 1-mev. resonant-transformer electron-beam generator is being acquired by the Institute from General Electric Co.'s x-ray department in Milwaukee, with delivery expected in mid-1957. One of the features of the new generator is rapid application of high doses of radiation to large work areas.

Two new experimental nuclear test loops have been placed into operation at the materials engineering department of Westinghouse Electric Corp., Pittsburgh, according to D. W. Gunther, department manager. They are to aid development and application of new nuclear materials and guide design manufacture of nuclear power equipment through information they yield, he noted.

New section in reactor and nuclear systems research has been established at Armour Research Foundation, Illinois Institute of Technology, Chicago, and will function within the Foundation's physics research department. According to Leonard Reiffel, department manager, this reactor and nuclear systems section will do re-research in reactor concepts; reactor core configurations; reactor kinetics; shielding studies; radiation processing concepts; and irradiation facility design.

Final stages have been reached in the planning for the 3-billion volt synchrotron which will be built at Princeton University's James Forrestal research Center at a cost of \$6 million. Milton G. White, professor of physics at Princeton and director of the project, said that Gibbs & Hill, Inc., New York, had been retained by the University as architect-engineers for the project. Two years have been spent on basic designs for the synchrotron, which will be financed largely by the USAEC; plans call for its completion by 1960.

Nuclear reactor center has been established in W. Caldwell, N.J., by Daystrom Nuclear div. of Daystrom, Inc. A 36,000-sq. ft. laboratory has been set up there, with research and administrative staff under the direction of Stephen Malaker, general manager of Daystrom Nuclear.

ATOMIC ENERGY FINANCIAL NEWS...

FORMAL SEC RULING MADE IN PRDC CASE:- Securities and Exchange Commission has now ruled that Power Reactor Development Co., of Detroit, is not an electric utility company within the meaning of the Public Utility Holding Co. Act of 1935. This means that the 21 utility and industrial companies that have committed some \$23,540,000 to the project are not holding companies subject to registration under this law. (Actually, the SEC had adopted rule U-7 last July declaring that a nuclear reactor company is not an electric utility company if engaged only in the production of heat and steam for use in generating facilities on a non-profit basis, and does research and development. However, the companies involved had requested a formal SEC ruling.) (The SEC's action affects only financing aspects of the PRDC project, which will sell steam to Detroit Edison Co. for generating electricity. Hearings are now underway on whether the fast breeder reactor, which PRDC is erecting at Lagoona Beach, Mich., is safe. The United Auto Workers and two other unions have charged it is not.)

CHANGES IN STOCKHOLDINGS SHOWN:- Stockholdings of officers of firms in nuclear work showed changes in December as follows: Holly Corp. (formerly Holly Uranium); Fred W. Fairman, Jr., director, bought 500 common shares making his direct holdings 1,000. Continental Uranium, Inc.; Gerald Gidwitz, chairman, bought 10,000 common shares and made gift of 9,000, making direct holdings of 809,801.

NEW PRODUCTS, PROCESSES & INSTRUMENTS...for nuclear lab & plant...

FROM THE MANUFACTURERS:- Trade-named Nucliguard, a combination area-personnel-equipment monitor detects changes in radioactivity levels and sounds warning whenever radiation exceeds a preset level. With sensitivity of 50-50,000 counts per min., the monitor is equipped with a gamma-sensitive scintillation probe or beta-gamma-sensitive Geiger-Muller probe. --Nuclear Measurements Corp., Indianapolis, Ind.

New low background well scintillation counter, model SC-57, is said to have background of approximately 100 counts per min., achieving reduction in background by factor of 5. Model SC-57 consists of standard sodium iodide well crystal and photo-multiplier mounted in a lead shield, which is supplied as an integral part of the instrument, and which provides three inches of lead around the crystal and phototube assembly. --Tracerlab, Inc., Waltham, Mass.

NOTES:- A laboratory isolation unit, by Fisher Scientific Co., Pittsburgh, Pa., is offered for studies in radiochemistry, toxic chemicals, biology, and other applications.

Jointly developed by Walter Kilde Nuclear Laboratories, and Elgin National Watch Co., an atomic battery was shown last fortnight in New York by its developers. Battery uses promethium-147, whose current high cost (\$500/curie) precludes present commercial applications of the battery, (Substantial reduction in this cost is expected later this year upon completion of new USAEC facilities at Oak Ridge.)

In an expansion of its overseas activities, Radiation Instrument Development Laboratory, 5737 S. Halstead St., Chicago, Ill., has entered into a manufacturing agreement with Intertechnique Company, Versailles, France.

What is believed will be the largest and most complete display of components for the commercial uses of nuclear energy will be shown at the International Atomic Exposition, Philadelphia, Mar. 11-15, 1957. Items will include master-slave manipulators; shielding and construction materials; control instrumentation; nuclear batteries; new types of atomic fuel elements; models of advanced types of nuclear reactors; radiation detection and decontamination devices; liquid metal pumps and steam generators; instruments for applications in unique nuclear problems; and other items.

Eight page brochure of R. S. Landauer, Jr., & Co., Park Forest, Ill., describes that firm's body, wrist and finger film badge services for monitoring x-ray, gamma and beta exposure.

Sincerely,

The Staff,
ATOMIC ENERGY NEWSLETTER

